

Acknowledgements

The research that was the inspiration and the starting point for building these guidelines: Center for Applied Special Technology (CAST), *Universal Design for Learning Guidelines Version 1.0* (Wakefield, MA: CAST, 2008) and the International Reading Association (Newark, DE, www.reading.org) Lynne Anderson-Inman and Mark A. Horney, "Supported E-text: Assistive Technology Through Text Transformations," *Reading Research Quarterly* 42, 1 (2007), pp. 154, 155, 156.

The following researchers reviewed these guidelines and provided valuable feedback and examples:

Assistive Technology Research Center, University of Toronto
Carrie Anton, Access to Students with Disabilities, Athabasca University
Dave L. Edyburn, University of Wisconsin-Milwaukee
Galileo Educational Network
Penny Highet, Consultant
Ross Ehart, Edmonton Regional Educational Consulting Services

Alberta Education Accessible Resources Working Group (2007–2009)

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C. Displaying Information (continued)

- **are descriptive (e.g., provide sufficient information to allow users to make informed choices)**

For example:

The section headings on the PBS Voyage of Doom website are short, descriptive and begin with different words (for ease of scanning) and convey adequate information for users to make an informed choice.

<http://www.pbs.org/wgbh/nova/lasalle/>

☒ universal

- **offer limited choices when students are making selections or providing input (e.g., drop-down menu, highlighting)**

For example:

Students are offered limited choices as they work through the LearnAlberta.ca interactive *Celebrity Garbage: Cal Calvino* and learn how to write a factual account.

<http://www.learnalberta.ca/content/tlfcgcc/index.html>

☒ universal

- **move to the correct field automatically when students are working through an interactive activity or task**

For example:

The Freedom Scientific website offers an example of an easy-to-complete form.

<http://www.freedomscientific.com/Training/Surfs-Up/WebTrack.htm>

☒ universal

- **provide friendly prompts for corrections**

For example:

The Game of the Week on the Merriam Webster Visual Online Dictionary challenges players to associate words with images. If players drag words to the incorrect place, the word bounces back with a friendly ping.

http://visual.merriam-webster.com/games_game-week.php

☒ universal

- **provide alternatives for physically responding (e.g., by hand, voice, single switch, joystick, keyboard or adapted keyboard).**

For example:

The Windows Accessibility Options feature allows users to customize keyboarding and the mouse. Users can do this by selecting Accessibility Options on their computer.

For more information, see the Microsoft website at

<http://www.microsoft.com/enable/training/windowsxp/opsmobility.aspx>

☒ specialized

C. Displaying Information (continued)

- **properly formatted digital text that can be easily transformed into other mediums**
 - **PDF accessible files** (e.g., that can accommodate text-to-speech software, large print production)
 - **XML files** that can be translated into braille and navigated efficiently by screenreaders

☒ universal

☒ specialized

- **captions for all spoken words (e.g., video, multimedia)**

For example:

The Inclusive Learning Exchange site offers a “Preference Menu” where users can choose alternatives to auditory content. Users check alternatives to auditory content and then click on “Next as Wizard” button to select specific preferences such as verbatim or reduced reading level captions. A sign language alternative is also available.

<http://www.inclusivelearning.ca/servlet/prefs>

The digNubia site offers captioning for all videos. Click on “Building the Pyramids of Meroë” to see how all viewers could benefit from captioning.

<http://www.dignubia.org/galleries/video.php>

☒ universal

☒ targeted

- **voice-overs for sections of printed text (e.g., “Listen” button)**

For example:

The Caregiver College website offers a voiceover for each section of its website. Users can turn on the readaloud feature at the beginning of each section.

<http://www.caregivercollege.org/scoa/?VisionLoss.html#2>

☒ universal

☒ targeted

- **visual equivalents for sound effects or alerts**

For example:

“ShowSounds: Display Captions for Speech and Sounds” is a Windows accessibility feature which instructs programs to provide all information visually, such as by displaying text captions or informative icons. Users can do this by selecting Accessibility Options from the software menu.

For more information, see the Microsoft website at

<http://www.microsoft.com/enable/training/windowsxp/showsounds.aspx>.

☒ specialized

C. Displaying Information (continued)

2. **PRESENTATIONAL options** enable the text and accompanying graphics to be presented in varying ways. These options allow the presentation of information to be customized to meet the specific learning needs and preferences of individual students (Anderson-Inman and Horney, p.154). Presentational options can include features that allow students and teachers to customize:

- **the size of text or images**

For example:

Many websites offer several font sizes. See the Vision Education Alberta website and click on the right hand top corner to choose font size.

<http://www.vision.alberta.ca/>

The United Kingdom WordTalk site offers a number of presentational options including text size, line and word spacing, background and text colour, and text font type. As user selects options, the site resets so users can see what the options do to the presentation.

<http://www.wordtalk.org.uk/Viewing-Options/index.php>

☒ universal

- **the contrast between background and text or image**

For example:

The United Kingdom WordTalk site offers a number of presentational options including text size, line and word spacing, background and text colour, and text font type. As user selects options, the site resets so users can see what the options do to the presentation.

<http://www.wordtalk.org.uk/Viewing-Options/index.php>

The Headstar website is available in both graphic and high contrast formats. Click on the High Contrast option at the top of the screen.

<http://www.headstar.com/site/index.php>

☒ universal

- **the colour used for information or emphasis (and colour cues are accompanied by text cues)**

For example:

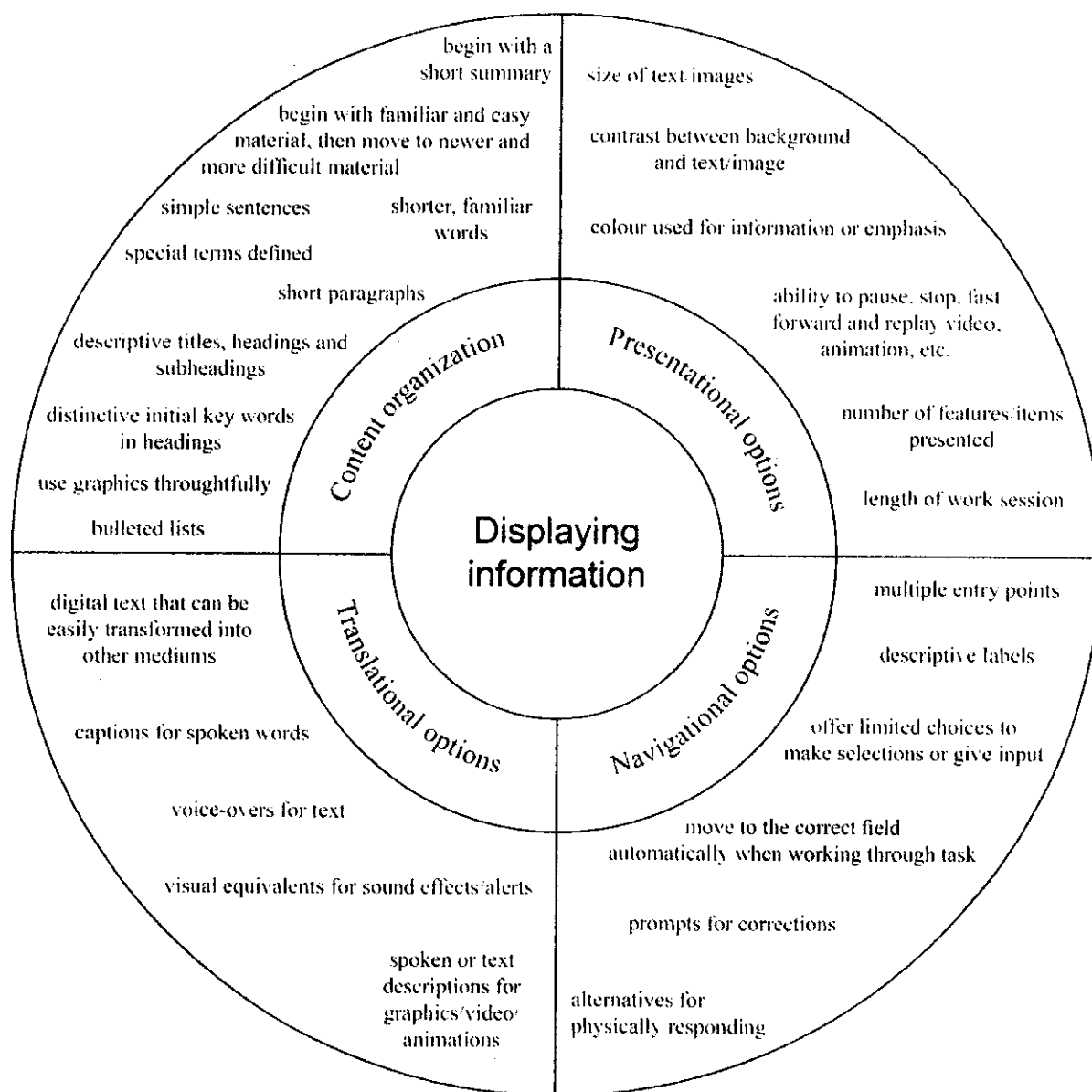
The Vision Education Alberta site provides visual cues for navigation by the design of the top horizontal and left navigation bars. For nonvisual users, heading and lists are used to provide similar navigation structure for screen reader users. By using colour differentiation of navigation areas, active item colour difference, and tooltips and link text, the same information is conveyed.

<http://www.vision.alberta.ca/>

☒ universal

C. Displaying Information

(Multiple means of representing and presenting information)



B. Building student understanding (continued)

- **relationships between new information and prior knowledge**

For example:

The Math Glossary on LearnAlberta.ca offers photos of real world examples for a number of math terms. To see an example, click on “Grades 1-3” and then scroll down and select “cubes.”

<http://www.ronblond.com/MathGlossary/>

☒ universal

- **key ideas and relationships through graphic representation (e.g., outlines, graphic organizers, unit organizers, concept maps).**

For example:

Inspiration software allows students and teachers to create their own webs. See teacher-made examples on the link below.

<http://www.inspiration.com/Examples/Inspiration>

☒ universal

6. **FEEDBACK options** are critical in helping students sustain the motivation and effort essential to learning. Feedback options should include features that enhance students’ capacity to monitor their own progress effectively and use that information to guide their own effort and practice. Feedback should be available throughout a learning activity through options that could include:

- **embedded prompts to “stop and think”**

For example:

In the CAST model book below, click on Pedro to see an example of a prompt to stop and interact with text.

<http://bookbuilder.cast.org/view.php?op=model&book=66&page=3>

☒ universal

- **embedded prompts for self-correction**

For example:

On the BBC Science & Nature: Space site, click on “Play the game” and then “Turn Help On” to receive prompts.

<http://www.bbc.co.uk/science/space/playspace/games/jigsaw/jigsaw.shtml>

☒ universal

- **models of think-alouds of the process**

For example:

In the CAST model book below, click on the digital tutor Monty to see a demonstration of predicting.

<http://bookbuilder.cast.org/view.php?op=model&book=66&page=2>

☒ universal

B. Building student understanding (continued)

- **offer simplified versions of text**

For example:

The Windows to the Universe site offers three levels of text difficulty. From the home page, choose “Our Solar System.” Compare the three levels by reading about comets at the Beginner, Intermediate and Advanced Level.

<http://www.windows.ucar.edu>

The Northeast Alberta Community Board of Persons with Developmental Disabilities has a very simple website that uses links, graphics, and multiple versions of documents like Summary, Detailed Summary and Simple Language.

<http://www.ne-pdd.org>

☑ universal

- **make relationships between elements explicit (e.g., links between ideas).**

For example:

The Elements of the Story on the Anneberg Media site are made explicit through visuals, audio, examples and a student interactive activity.

<http://www.learner.org/interactives/story/index.html>

☑ universal

4. **ILLUSTRATIVE options** provide a visual representation or example of something in the text. They are designed to support, supplement or extend understanding of the text through illustrations or examples.

Both static and dynamic graphics, when combined with electronic text, promote more active engagement than text alone. This can lead to increased understanding for most students.

In order for graphics to be effective, they must be supportive of the context in which they are used to explain or illustrate key concepts, principles or processes. Having no graphics is better than having the wrong graphics. There is also the potential that too many graphics could be distracting or cause cognitive overload and interfere with learning. (Anderson-Inman and Horney, p. 155).

B. Building student understanding (continued)

- **progressive release of new information**

For example:

Anneberg Media's The Dynamic Earth Interactive below offers an exploration of earth's structure by allowing students to access different sections of information at their own pace.

<http://www.learner.org/interactives/dynamicearth/index.html>

In the link below, the Voyage of Doom from the PBS website provides a blueprint of a ship and students can work their way through the different artifacts and click to obtain more information.

<http://www.pbs.org/wgbh/nova/lasalle/shipwreck.html>

☒ universal

- **interactive activities that guide exploration and reflection**

For example:

The HubbleSite's special feature on black holes (click on "Journey to a Black Hole") offers interactive opportunities.

http://www.hubblesite.org/explore_astronomy/black_holes/modules.html

☒ universal

- **opportunities for spaced review and practice.**

For example:

Hotmath's "Catch the Fly" activity below creates opportunities for students to use x and y coordinates.

http://hotmath.com/hotmath_help/games/ctf/ctf_hotmath.swf

The National Council of Teachers of Mathematics Illuminations website offers applets such as "Free Ride" which allows students to practise a concept (such as ratios) in a number of contexts.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=178>

The WebMATH site offers students opportunities to create their own worksheets for review and practice.

<http://www.webmath.com/wsheel.html>

☒ universal

3. **EXPLANATORY options** provide information that clarifies the what, where, how or why of a concept, process or event (Anderson-Inman and Horney, p. 154).

Different types of definitions—standard dictionary definitions (often with multiple options to choose from) or glossary definitions (a single option that is context specific)—can have different impacts on learning. (Anderson-Inman and Horney, p. 156).

B. Building student understanding (continued)

1. **BACKGROUND KNOWLEDGE** is key to developing new skills and understandings. Students differ in their level of background knowledge. Accessible design and thoughtful presentation of information can provide cognitive ramps to ensure that all students have access to new knowledge. Background knowledge can be activated or provided by tools and strategies such as:

- **instructional strategies that activate relevant prior knowledge (e.g., using visual imagery, concept mapping)**

For example:

On this Nova site, students have an opportunity to engage with the concept of a reference point in measurement.

<http://www.pbs.org/wgbh/nova/zero/degrees.html>

☒ universal

- **graphic organizers (e.g., KWL charts, concept maps)**

For example:

See a sample graphic organizer from the online book *How People Learn*.

http://www.nap.edu/openbook.php?record_id=6160&page=28#p200064829960028001

☒ universal

- **explicitly teaching vocabulary and concepts in context**

For example:

The Interactives at the Learner.org site teaches critical prerequisite geometry concepts through interactive demonstrations and models.

<http://www.learner.org/interactives/geometry/index.html>

See the teacher-developed website below that teaches vocabulary, allusions and idioms within the context of the novel *Of Mice and Men*.

http://www.lausd.k12.ca.us/Belmont_HS/mice/

☒ universal

- **teaching critical prerequisite concepts through demonstration or models**

For example:

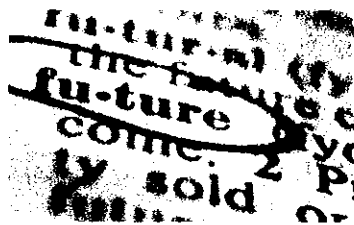
The Anneberg Media site offers an “Archaeological Sampling

Strategies” link that uses visuals to provide background information for a beginning archaeologist.

http://www.learner.org/interactives/collapse/mesopotamia_sub.html

☒ universal

A. Creating student engagement (continued)



Emerging Technologies with Promise

Student-centred notational options are built in to digital resources and include text-to-speech capacity, interactive dictionaries, tools for note taking and writing tools. A built-in toolbar can be customized to meet the personalized learning needs and preferences of individual students. A student workspace saves preferences and student work.

For example:

Texthelp's Lexiflow software has the capacity to convert paper-based content to digital read-aloud with enhanced electronic features such as highlighting, sticky notes and dictionaries.

<http://www.texthelp.com/webfiles/US%20LexiflowFlyer%200108.pdf>

☒ universal

A. Creating student engagement (continued)

- **sentence starters**

For example:

The Classroom Tools site offers over 500 writing prompts that students can access randomly.

http://www.writingfix.com/Classroom_Tools/dailypromptgenerator.htm

☑ universal

- **idea or story webs**

For example:

Kidspiration software allows students to create their own webs. See examples on the link below.

<http://www.inspiration.com/Examples/Kidspiration>

☑ universal

- **outlining tools**

For example:

Kidspiration software allows students to build webs and then turn these into linear outlines. Click on the Charlotte's Web graphic of a mind map. Then click "Switch to writing view" in the top left-hand corner.

<http://www.inspiration.com/Examples/Kidspiration>

☑ universal

- **note-taking guides**

For example:

Many study sites include tips for taking notes. See Study Guides and Strategies website tips for recording notes in a concept map or mind map.

<http://www.studygs.net/mapping/>

The CAST site offers a Strategy Tutor for students researching on the web. Click the "Student Research Project Tour" link to view the features of this online tool.

<http://cst.cast.org/cst/guest/SPAGE,whatis>

☑ universal

- **audio notes**

For example:

A number of new technologies, including the iPhone, have capacity to record and share audio notes.

http://www.jankuj.com/Audio_Notes.html

☑ universal

- **electronic sticky notes.**

For example:

There are many free sites that offer online versions of sticky notes.

<http://notes.mastervb.net/>

☑ universal

A. Creating student engagement (continued)

- **gaming or simulation environments.**

For example:

Amusement Park Physics offers a variety of contexts to explore physics laws including building a roller coaster and a bumper car.

<http://www.learner.org/interactives/parkphysics/index.html>

For younger students, Space Math offers an opportunity to use shapes to build a spaceship.

<http://www.knowledgebox.com/kbkids.htm> and click on Space Math

 universal

2. **PERSONAL CHOICE** as an option can be highly engaging in itself. Choice can increase motivation, learning and comprehension.

It may not be possible to always offer students options for *what* they are learning, but it is often possible to offer choices in *how* specific outcomes can be explored, applied and demonstrated. Students can benefit from opportunities to choose the context for learning, and the tools and/or supports used for that learning.

Options for personal choice can include:

- **level of perceived challenge**


For example:

On the BBC Science & Nature: Space site, click on “Play the game” to see the three levels of challenge that students may choose from.

<http://www.bbc.co.uk/science/space/playspace/games/jigsaw/jigsaw.shtml>

On LearnAlberta.ca, the lesson material *Spectrum: Exploring Language* offers students four learning levels: turbo, ultra turbo, pro and superpro, with brief explanations of each.

Go to www.LearnAlberta.ca and enter “Spectrum: Exploring Language” in the “Find Resources by Search” tab.


 universal

- **context for exploring and practising skills and concepts**

For example:

Amusement Park Physics offers a variety of contexts to explore physics laws including building a roller coaster and a bumper car.

<http://www.learner.org/interactives/parkphysics/index.html>

 universal

A. Creating student engagement (continued)

1. **MULTIPLE EXPRESSION options** for students allow them to explore and demonstrate their learning in authentic and personalized ways. This includes a range of strategies, tools and opportunities for demonstrating what they have learned, including:

- **text**

For example:

The Anneberg Media site below offers an online journal with built-in prompts that provides a structure for students to explore and record their learning.

<http://www.learner.org/interactives/collapse/copan/journal.php?id=3235370936>

The Crayon.net site offers an electronic template for students to create their own newspapers.

<http://www.crayon.net/using/how.html>

The Windows to the Universe site offers an online journal with a free account.

<http://www.windows.ucar.edu/php/journal/WBentry.php>

☒ universal

- **graphic organizers**

For example:

This LearnAlberta.ca learning object titled "Assessment: Linking Teaching and Learning" offers graphic organizer templates.

<http://www.learnalberta.ca/content/ssass/html/index.html>

The Education Oasis site includes 58 downloadable graphic organizers. Some are PDFs files and others can be completed online and then printed.

http://www.educationoasis.com/curriculum/graphic_organizers.htm

The Classtools site offers a menu of dynamic outlining tools.

<http://classtools.net>

☒ universal

- **speech**

For example:

The Meadow Brook Press site offers a Readers' Theatre page as just one of multiple strategies possible for using speech to explore and demonstrate learning.

<http://www.fictionteachers.com/classroomtheater/rumple.html>

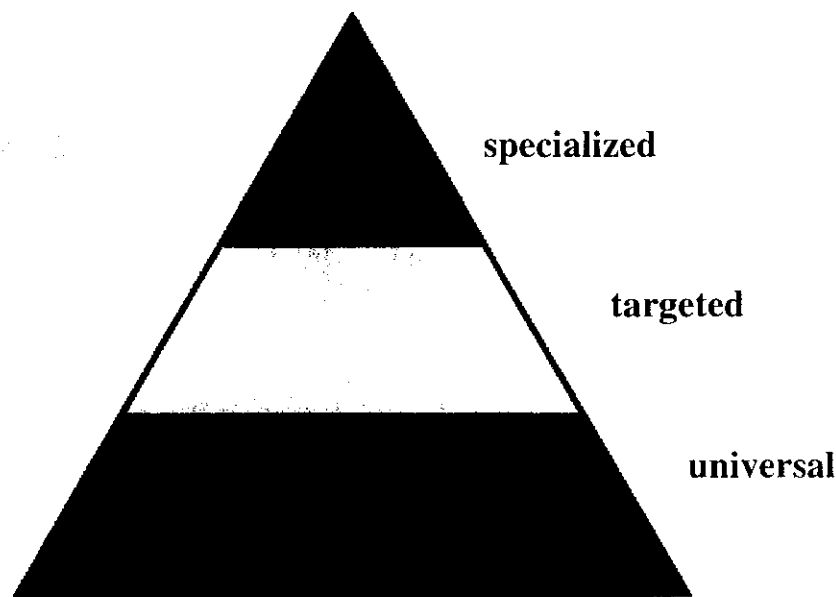
The Audacity site offers strategies and tools for students to compose in speech.

<http://audacity.sourceforge.net>

☒ universal

The guidelines are classified into three categories or tiers: universal, targeted and specialized.

- **Tier one** is universal guidelines that describe criteria that will benefit all students. These guidelines should be mandatory for the development, acquisition and authorization of all print, multimedia and online learning resources for students.
- **Tier two** is targeted guidelines that describe criteria that will benefit students with specific learning needs and or preferences.
- **Tier three** is specialized guidelines that describe criteria to meet the needs of the small number of students who have specialized needs related to sensory, physical and/or cognitive disabilities.



These new accessibility guidelines will complement and strengthen the current international W3C standards for web accessibility that are now part of the development process. They will also complement and strengthen the current review criteria used in the review and authorization of print and multimedia resources to support Alberta's programs of study. The guidelines will be shared with other Ministry branches that may be developing student material as well as individual school jurisdictions that may be developing and/or acquiring student resources including online learning materials and digital content for interactive whiteboards.

School administrators and other leadership staff may find these guidelines helpful in assessing the instructional impact of digital resources. Classroom teachers may find these guidelines helpful when selecting learning resources for their students.

Alberta Education Cataloguing in Publication Data

Alberta. Alberta Education. Program Development and Standards Division.
Guidelines for accessible learning resources for all students.

ISBN 978-0-7785-8588-6

1. Educational technology – Alberta. 2. Computer-assisted instruction – Alberta.
3. Individualized instruction – Alberta. 4. Children with disabilities – Education – Alberta.
I. Title.

LB1028.3 A333 2009

371.33

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A PDF version of this resource is
available on the Alberta Education Web
site at

[http://education.alberta.ca/department/
publishers.aspx](http://education.alberta.ca/department/publishers.aspx)

The primary audience for this document
is:

Publishers and resource developers	✓
Administrators	✓
Teachers	✓
Educational Consultants	✓

Note: Web sites listed in this document are
provided as a service only to illustrate specific
criteria for accessible resources. All Web site
addresses were accurate at the time of
publication but are subject to change.

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